



**POTENTIAL HAZARDOUS WASTE SITE  
PRELIMINARY ASSESSMENT  
PART 1 - SITE INFORMATION AND ASSESSMENT**

**I. IDENTIFICATION**

01 STATE 02 SITE NUMBER  
IL 3890008946

**II. SITE NAME AND LOCATION**

01 SITE NAME (Name, common, or descriptive name of site) Argonne National Laboratory-Illinois (ANL-IL) Facility 317 - French Drain		02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER 9700 South Cass Avenue			
03 CITY Argonne	04 STATE IL	05 ZIP CODE 60439	06 COUNTY DuPage	07 COUNTY CODE 043	08 CON- DIST 13
09 COORDINATES LATITUDE 41°42' 0.0"		LONGITUDE 87° 58' 38.0"			

10 DIRECTIONS TO SITE (Starting from nearest public road) From I-55 exit south on Cass Ave. Turn west on Northgate Road to enter ANL. The 317 Facility area is located on the south side of ANL-IL. The 317 Facility is south of Meridian Road and has a fence around it. The French Drain was located southeast of the vault storage area.

**III. RESPONSIBLE PARTIES**

01 OWNER (if known) U.S. Department of Energy (DOE-CH)		02 STREET (Business, mailing, residential) 9800 South Cass Avenue			
03 CITY Argonne	04 STATE IL	05 ZIP CODE 60439	06 TELEPHONE NUMBER (312) 972-2271		
07 OPERATOR (if known and different from owner) Argonne National Laboratory		08 STREET (Business, mailing, residential) 9700 South Cass Avenue			
09 CITY Argonne	10 STATE IL	11 ZIP CODE 60439	12 TELEPHONE NUMBER (312) 972-3998	Aubrey Smith Envir. Compliance Officer	
13 TYPE OF OWNERSHIP (Check one) <input type="checkbox"/> A. PRIVATE <input checked="" type="checkbox"/> B. FEDERAL DOE-CH (Agency name) <input type="checkbox"/> C. STATE <input type="checkbox"/> D. COUNTY <input type="checkbox"/> E. MUNICIPAL <input type="checkbox"/> F. OTHER (Specify) <input type="checkbox"/> G. UNKNOWN					

**14 OWNER-OPERATOR NOTIFICATION ON FILE (Check all that apply)**

☐ A RCRA 3001 DATE RECEIVED: / / ☐ B UNCONTROLLED WASTE SITE (RCRA 103) DATE RECEIVED: / / ☒ C NONE

**IV. CHARACTERIZATION OF POTENTIAL HAZARD**

01 ON SITE INSPECTION <input checked="" type="checkbox"/> YES DATE 06/22/87 <input type="checkbox"/> NO		BY (Check all that apply) <input type="checkbox"/> A. EPA <input type="checkbox"/> B. EPA CONTRACTOR <input type="checkbox"/> C. STATE <input type="checkbox"/> D. OTHER CONTRACTOR <input type="checkbox"/> E. LOCAL HEALTH OFFICIAL <input checked="" type="checkbox"/> F. OTHER DOE Environmental Survey (Specify)			
CONTRACTOR NAME(S)					

02 SITE STATUS (Check one) <input type="checkbox"/> A. ACTIVE <input checked="" type="checkbox"/> B. INACTIVE <input type="checkbox"/> C. UNKNOWN		03 YEARS OF OPERATION BEG. YEAR 1953 ENDING YEAR 1957 <input type="checkbox"/> UNKNOWN			
04 DESCRIPTION OF SUBSTANCES POSSIBLY PRESENT, KNOWN, OR ALLEGED From 1953 to 1957, a French Drain was located in the 317 radioactive waste staging area. The French Drain was a shallow trench along the natural drainage course to the southeast, which was filled with stones and covered with soil. No record of the liquids poured into this drain exist, but it is considered that toxic organics were poured into this drain.*					

**05 DESCRIPTION OF POTENTIAL HAZARD TO ENVIRONMENT AND/OR POPULATION**

The greatest potential hazard resulting from this site appears to be the potential for groundwater contamination. No regular monitoring for toxic chemicals has been conducted at the site.

**V. PRIORITY ASSESSMENT**

01 PRIORITY FOR INSPECTION (Check one. If high or medium is checked, complete Part 2. If low is checked, complete Part 3. If none is checked, complete current disposition form.)			
<input type="checkbox"/> A. HIGH (Inspection required promptly)	<input checked="" type="checkbox"/> B. MEDIUM (Inspection required)	<input type="checkbox"/> C. LOW (Inspect on site available basis)	<input type="checkbox"/> D. NONE (No further action needed. Complete current disposition form.)

**VI. INFORMATION AVAILABLE FROM**

01 CONTACT Barry Fritz	02 OF (Agency Organization) DOE-CH, Operational & Envir. Safety Division		03 TELEPHONE NUMBER (312) 972-2271	
04 PERSON RESPONSIBLE FOR ASSESSMENT C. L. Cheever	05 AGENCY DOE	06 ORGANIZATION ANL-IL	07 TELEPHONE NUMBER (312) 972-3311	08 DATE 3/30/88 MONTH DAY YEAR

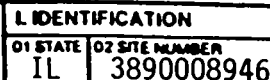
EPA FORM 2070-12 (7-81)

\*Based upon employee recollections and upon records of subsequent disposals at the 800-area French Drain also located at ANL.

EPA Region 5 Records Ctr.



341942



**03 WASTE CHARACTERISTICS** *(Check all that apply)*

<input checked="" type="checkbox"/> A TOXIC	<input type="checkbox"/> E SOLUBLE	<input type="checkbox"/> I HIGHLY VOLATILE
<input type="checkbox"/> B CORROSIVE	<input type="checkbox"/> F INFECTIOUS	<input type="checkbox"/> J EXPLOSIVE
<input type="checkbox"/> C RADIOACTIVE	<input type="checkbox"/> G FLAMMABLE	<input type="checkbox"/> K REACTIVE
<input type="checkbox"/> D PERSISTENT	<input type="checkbox"/> H IRRITANT	<input type="checkbox"/> L INCOMPATIBLE
		<input type="checkbox"/> M NOT APPLICABLE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE			
OLW	OLY WASTE			
SOL	SOLVENTS			
PSD	PESTICIDES			
OCC	OTHER ORGANIC CHEMICALS	13,000	gallons	*
IOC	INORGANIC CHEMICALS			
ACD	ACIDS			
BAS	BASES			
MES	HEAVY METALS			

[illegible]

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS			FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

(2) Phase I CERCLA Program, ANL-IL Installation Assessment Report(required by DOE Order 5480.14), July 1986, pages 24 and 32.



POTENTIAL HAZARDOUS WASTE SITE  
PRELIMINARY ASSESSMENT

PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION

01 STATE 02 SITE NUMBER  
IL 3890008946

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 ☒ A GROUNDWATER CONTAMINATION 02 ☐ OBSERVED (DATE \_\_\_\_\_) ☒ POTENTIAL ☐ ALLEGED  
03 POPULATION POTENTIALLY AFFECTED 23,000 04 NARRATIVE DESCRIPTION

SEE ATTACHED

01 ☒ B SURFACE WATER CONTAMINATION 02 ☐ OBSERVED (DATE \_\_\_\_\_) ☒ POTENTIAL ☐ ALLEGED  
03 POPULATION POTENTIALLY AFFECTED 0 04 NARRATIVE DESCRIPTION

The potential for surface water contamination exists. A small stream lies south of the 317-area and flows in the southeasterly direction toward the Des Plaines River. It is possible that contaminated water or soil may have entered this stream. (Ref (5) p. 1-2) Surface water in the immediate area is not used for drinking water or recreational purposes.

01 ☐ C CONTAMINATION OF AIR 02 ☐ OBSERVED (DATE \_\_\_\_\_) ☐ POTENTIAL ☐ ALLEGED  
03 POPULATION POTENTIALLY AFFECTED \_\_\_\_\_ 04 NARRATIVE DESCRIPTION

01 ☐ D FIRE/EXPLOSIVE CONDITIONS 02 ☐ OBSERVED (DATE \_\_\_\_\_) ☐ POTENTIAL ☐ ALLEGED  
03 POPULATION POTENTIALLY AFFECTED \_\_\_\_\_ 04 NARRATIVE DESCRIPTION

01 ☒ E DIRECT CONTACT 02 ☐ OBSERVED (DATE \_\_\_\_\_) ☒ POTENTIAL ☐ ALLEGED  
03 POPULATION POTENTIALLY AFFECTED 50 employees 04 NARRATIVE DESCRIPTION

The potential for direct contact with contaminated soil or water does exist for employees who enter the area for work, monitoring, or inspection purposes. The potential for contact by nonemployees does not exist since the entire ANL-IL facility is controlled by a security fence and a continuous onsite security force. In addition, the 317 area is controlled by an additional security fence.

01 ☐ F CONTAMINATION OF SOIL 02 ☐ OBSERVED (DATE \_\_\_\_\_) ☒ POTENTIAL ☐ ALLEGED  
03 AREA POTENTIALLY AFFECTED 0.20 04 NARRATIVE DESCRIPTION

Soil in the area of the French Drain has the potential to be contaminated with toxic organics. Soil samples from this site have not been tested for toxic organic pollutants.

01 ☒ G DRINKING WATER CONTAMINATION 02 ☐ OBSERVED (DATE \_\_\_\_\_) ☒ POTENTIAL ☐ ALLEGED  
03 POPULATION POTENTIALLY AFFECTED 23,000 04 NARRATIVE DESCRIPTION

SEE ATTACHED

01 ☐ H WORKER EXPOSURE/INJURY 02 ☐ OBSERVED (DATE \_\_\_\_\_) ☐ POTENTIAL ☐ ALLEGED  
03 WORKERS POTENTIALLY AFFECTED: \_\_\_\_\_ 04 NARRATIVE DESCRIPTION

01 ☐ I POPULATION EXPOSURE/INJURY 02 ☐ OBSERVED (DATE \_\_\_\_\_) ☐ POTENTIAL ☐ ALLEGED  
03 POPULATION POTENTIALLY AFFECTED \_\_\_\_\_ 04 NARRATIVE DESCRIPTION

## CONTINUATION SHEET

### Part 3 Description of Hazardous Conditions and Incidents

ANL-IL

IL 3890008946

Facility 317 - French Drain

#### II. 01 A Groundwater Contamination

The potential for groundwater contamination exists. Groundwater in parts of the ANL-IL facility is in the perched condition because of the relative impermeability of the underlying silty clay. This clay can restrict downward waterflow and create a lateral perched water-flow condition. The groundwater pattern in the area would probably follow the area topography, flowing south-easterly toward the Des Plaines River. Contaminated water may percolate downward into the perched groundwater and migrate in a southeasterly direction offsite. (Ref. (5), p.2).

Population = 3,000 employees plus 20,000 residents within three miles and north of the Des Plaines River.

#### II. 01G Drinking Water Contamination

In the vicinity of ANL-IL, only subsurface water (from both shallow and deep aquifers) and Lake Michigan water are used for drinking purposes. The potential for contamination of groundwater used for drinking purposes does exist. Two principal aquifers are used as water supplies in the vicinity of ANL-IL. The upper aquifer is the Niagaran-Alexandrian dolomite, which is about 200-ft. thick in the ANL-IL area and has a piezometric surface between 50 and 100 ft. below the ground surface. The lower aquifer is the Galesville sandstone which lies between 490 and 1500 ft. below the surface. Maquoketa shale separates the aquifers and retards hydraulic connection between the aquifers.

The four domestic water wells now in use at ANL-IL are about 300-ft. deep in the Niagaran dolomite. All four wells are located north of the site. The nearest well is approximately one mile northeast of the site. Groundwater in the area of the site probably flows toward the southeast.

The distance to the nearest well is one to two miles and a population of 3,000-10,000 is served.

Population = 3000 employees + 20,000 residents within three miles and north of the Des Plaines River.

(Ref. (1) p. 8,12; Ref. (2) p.6 and Attachment 1; Ref. (5) p. 1-2).



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I. IDENTIFICATION

01 STATE 02 SITE NUMBER  
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II. HAZARDOUS CONDITIONS AND INCIDENTS (Continued)

01 ☒ J. DAMAGE TO FLORA  
04 NARRATIVE DESCRIPTION

02 ☐ OBSERVED (DATE: \_\_\_\_\_) ☒ POTENTIAL ☐ ALLEGED

The potential for damage to flora exists for flora in the immediate vicinity of the French Drain location.

01 ☒ K. DAMAGE TO FAUNA  
04 NARRATIVE DESCRIPTION (include name(s) of species)

02 ☐ OBSERVED (DATE: \_\_\_\_\_) ☒ POTENTIAL ☐ ALLEGED

The potential for damage to fauna does exist since a number of animals wander freely at ANL-IL and in the Forest Preserve.

01 ☐ L. CONTAMINATION OF FOOD CHAIN  
04 NARRATIVE DESCRIPTION

02 ☐ OBSERVED (DATE: \_\_\_\_\_) ☐ POTENTIAL ☐ ALLEGED

01 ☐ M. UNSTABLE CONTAINMENT OF WASTES  
(Spills, runoff, standing liquids, leaking drums)

02 ☐ OBSERVED (DATE: \_\_\_\_\_) ☐ POTENTIAL ☐ ALLEGED

03 POPULATION POTENTIALLY AFFECTED: \_\_\_\_\_ 04 NARRATIVE DESCRIPTION

01 ☐ N. DAMAGE TO OFFSITE PROPERTY  
04 NARRATIVE DESCRIPTION

02 ☐ OBSERVED (DATE: \_\_\_\_\_) ☐ POTENTIAL ☐ ALLEGED

01 ☐ O. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs

02 ☐ OBSERVED (DATE: \_\_\_\_\_) ☐ POTENTIAL ☐ ALLEGED

04 NARRATIVE DESCRIPTION

01 ☐ P. ILLEGAL/UNAUTHORIZED DUMPING

02 ☐ OBSERVED (DATE: \_\_\_\_\_) ☐ POTENTIAL ☐ ALLEGED

04 NARRATIVE DESCRIPTION

05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEGED HAZARDS

III. TOTAL POPULATION POTENTIALLY AFFECTED: 23,000 (See attached)

IV. COMMENTS

Soil and water samples should be collected from the area and analyzed for organic, inorganic, and priority pollutant contaminants.  
Deep groundwater monitoring wells should be installed in the area to determine if contaminants are in the drinking water aquifer.

V. REFERENCES OF INFORMATION (Cite specific references, e.g., State files, sample analysis, reports)

- (1) 1986 Annual Site Environmental Report for Argonne National Laboratory (Report #ANL-87-9) by N. Golchert and T. Duffy.
- (2) Phase I CERCLA Program, ANL-IL Installation Assessment Report (required by DOE order 5480.14), July 1986.

## **CONTINUATION SHEET**

### **Part 3 Description of Hazardous Conditions and Incidents**

**ANL-IL**

**IL 3890008946**

**Facility 317 - French Drain**

#### **III Total Population Potentially Affected**

23,000 (3000 employees + 20,000 residents within three miles and north of the Des Plaines River.) (Ref (1) p.8).

#### **V. Sources of Information (Continued)**

- (3) 1988 Inventory of Federal Hazardous Waste Activities (for ANL-IL).
- (4) Environmental Assessment Related to the Operation of Argonne National Laboratory (DOE/EA-0181), August 1982.
- (5) ANL-IL Intra-Laboratory Memo; S. Y. Tsai to N. W. Golchert; Subject: Groundwater Monitoring Plan for the 317-319 Area; September 17, 1985.
- (6) Site Plan (ANL-IL Map), January 9, 1986.
- (7) ANL Map with PA legend, April 1988

Summary Report for Preliminary Assessment of the ANL-IL

Facility 317 - French Drain

4/13/88

Usage of the Facility 317 stone trench style French Drain in the 1950's for disposal of toxic liquids leaves a potential for groundwater contamination. So much time has elapsed since the closing of this facility (1957) that air and surface water contamination are not likely. There are no records of disposal.

Monitoring wells have been installed in this vicinity but routine monitoring for toxic chemicals has not commenced.

- Recommendations:
- (1) Sample and analyze monitoring wells on a quarterly basis for potential toxic chemicals.
  - (2) Complete a Site Investigation (SI) (possibly combined with the 319 Landfill and French Drain).